

Geometry Date _____
44-46)

1.6 Notes: Angle Pairs (pp

Name an example of each type of angle from the figure.

A. Obtuse

$\angle ABC$ or $\angle EBD$

B. Acute

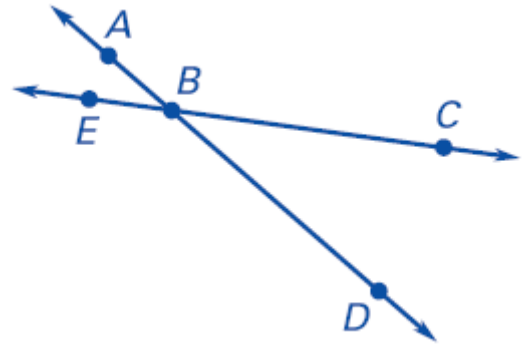
$\angle ABE$ or $\angle CBD$

C. Straight

$\angle ABD$ or $\angle EBC$

D. A pair of adjacent angles

$\angle ABE$ & $\angle EBC$



Complementary Angles:

2 angles that sum to 90°

Supplementary Angles:

2 angles that sum to 180°

Adjacent Angles:

2 angles that share a vertex & a side, but don't intersect.

Linear Pair:

2 angles that are adjacent & supplementary

Vertical Angles (Vertically Opposite Angles):

2 angles whose sides are opposite rays.

Examples

1. Are $\angle 1$ & $\angle 2$ a linear pair?

Yes.

2. Are $\angle 4$ & $\angle 5$ a linear pair?

No.

3. Are $\angle 5$ & $\angle 3$ vertical angles?

No.

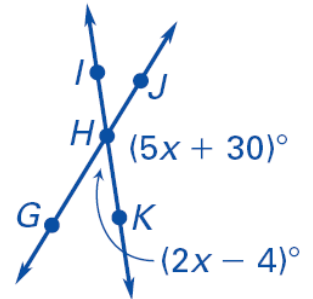
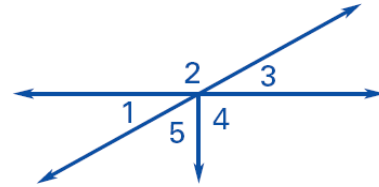
4. Are $\angle 1$ & $\angle 3$ vertical angles?

Yes.

5. **Guided Practice:** Name one pair of vertical angles and one pair of angles that form a linear pair.

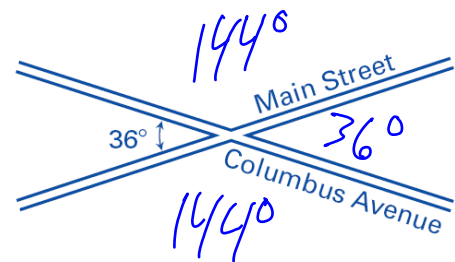
$\angle I H J$ & $\angle G H K$ / $\angle I H G$ & $\angle J H K$

$\angle I H J$ & $\angle J H K$ / $\angle I H G$ & $\angle G H K$



Examples

6. In one town, Main Street and Columbus Avenue intersect to form an angle of 36° . Find the measures of the other three angles.



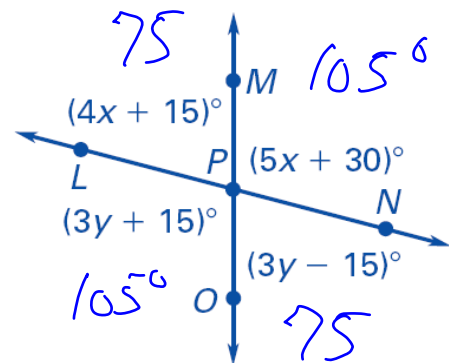
7. Solve for x and y . Then find the angle measures.

$$9x + 45 = 180$$

$$9x = 135$$

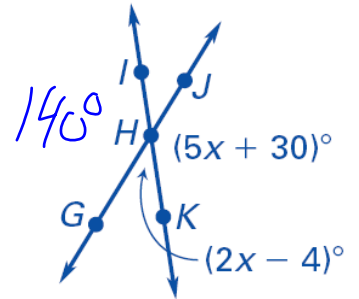
$$x = 15$$

$$y = 30$$



8. Guided Practice: What is the measure of $\angle GHI$?

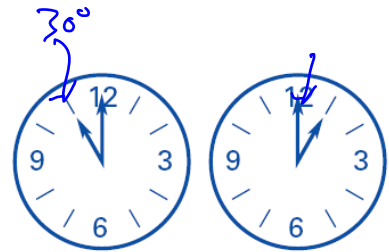
$$\begin{aligned} 7x + 26 &= 180 \\ 7x &= 154 \\ x &= 22 \end{aligned}$$



Examples

9. State whether the two angles are complementary, supplementary, or neither.

Neither.



10. Given that $\angle G$ is a supplement of $\angle H$ and $m\angle G = 82^\circ$, find $m\angle H$.

$$m\angle H = 98^\circ$$

11. Given that $\angle U$ is a complement of $\angle V$, and $m\angle U = 73^\circ$, find $m\angle V$.

$$m\angle V = 17^\circ$$

12. $\angle T$ & $\angle S$ are supplementary. The measure of $\angle T$ is half the measure of $\angle S$. Find $m\angle S$.

$$x + 2x = 180$$

$$x = 60 \text{ \& } 120^\circ$$

$$m\angle S = 120^\circ$$

Guided Practice.

13. $\angle D$ & $\angle E$ are complements and $\angle D$ & $\angle F$ are supplements. If $m\angle E$ is four times $m\angle D$, find the measure of each of the three angles.

$$\begin{aligned} 4x + x &= 180 \\ 5x &= 180 \\ x &= 36 \end{aligned}$$

$$\begin{aligned} m\angle D &= 36 \\ m\angle E &= 144^\circ \\ m\angle F &= 144^\circ \end{aligned}$$

14. Explain the difference between complementary angles and supplementary angles.

Complementary add to 90° &
supplementary add to 180° .